

Travel Demand Modeling

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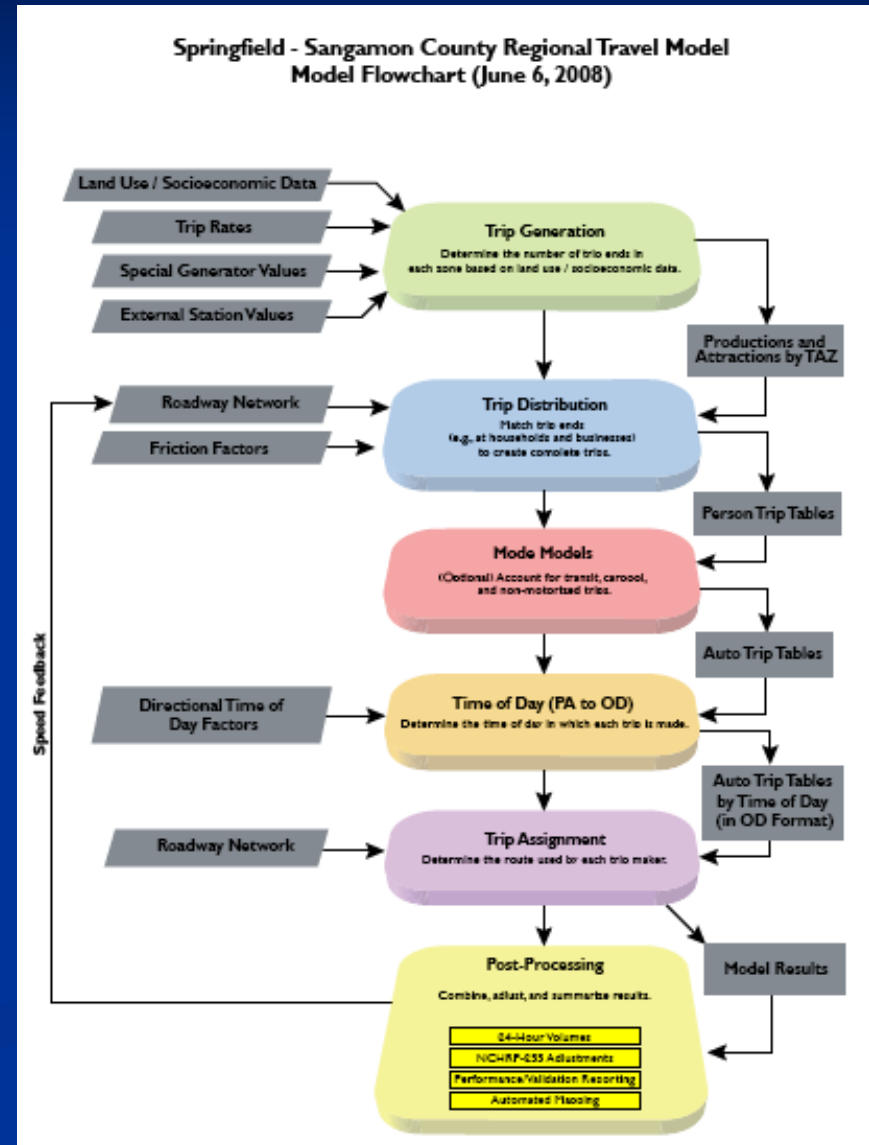
SSCRPC Planning College
September 13, 2008

What is Travel Demand Modeling?

- Representation of travel based on various data sources

- GIS
- Traffic Counts
- Land Use
- Census Data

- Four Step Process



How a model can be used

- Review current movements
- Make predictions based on...
 - Changed land use
 - Development
 - New roadway
 - Increased transit ridership
 - Forecasting (Base year vs. Forecast year)
 - Etc...

Available Data

■ Sangamon County GIS

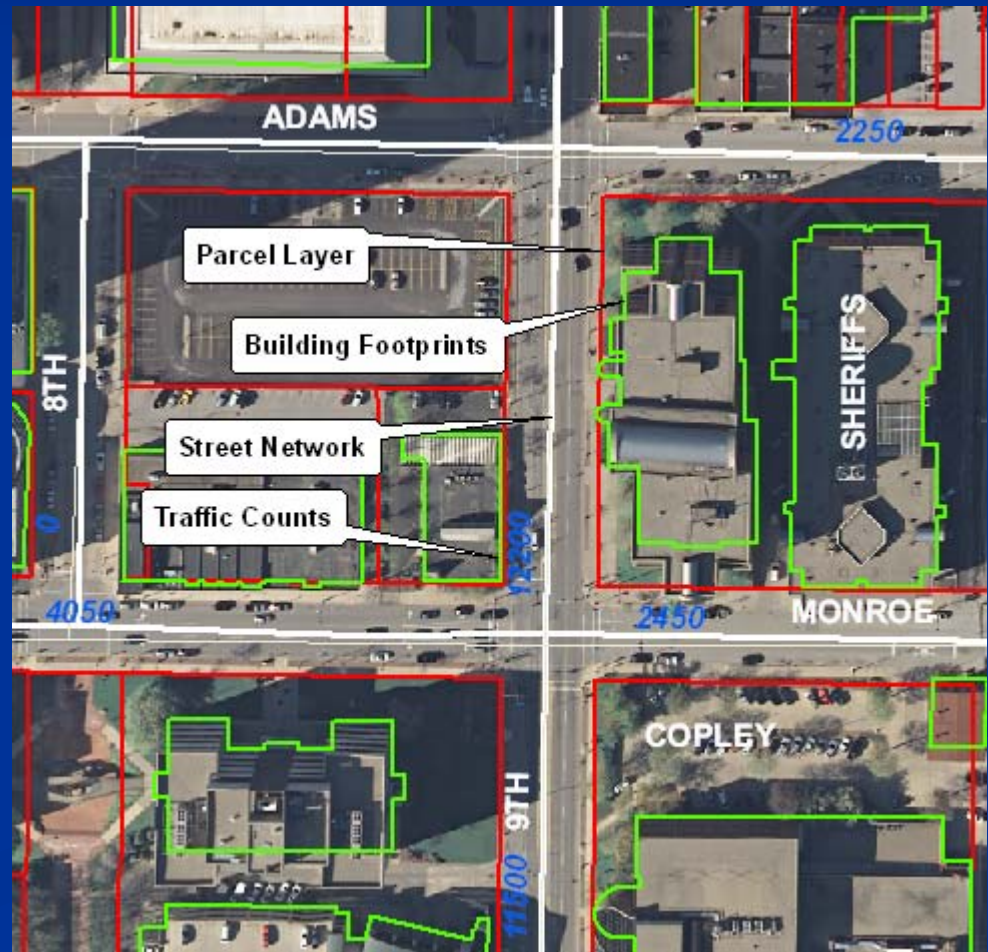
- Street Network
- Parcel Data
- Building Footprints
- Aerial Photo

■ IDOT

- Traffic Counts

■ Census

- Demographics



Data Sources

Presentation - ArcMap - ArcView

File Edit View Insert Selection Tools Window Help

1:2,073 Layer: adt01084 100% 500

Identify

Identify from: transnetwork.SANGIS.StreetCL

transnetwork.SANGIS.StreetCL
9TH

Location: 2,443,536.255 1,141,336.307 Feet

Field	Value
OBJECTID	14152
LifeCycleStatus	<null>
Class	Other Principal Arterial
PostedSpeed	<null>
OneWay	No
L_F_ADD	200
L_T_ADD	200
R_F_ADD	201
R_T_ADD	299
PREDIR	S
STNAME	9TH
STTYPE	ST
PO_CITY	SPRINGFIELD
ZIP	62701
DISPTXT	S 9TH ST
DISPHUNDREDBLOCK	
LOCATIONCITY	SPRINGFIELD
SEGID	3637
LEFTZIPCODE	62701
RIGHTZIPCODE	62701
LEFTZIP4	<null>
RIGHTZIP4	<null>
SHAPE	Polyline
Globalid	{8EF47675-2403-44F5-8391-389AE}
XType	Public Street
SufDir	<null>
PreType	<null>
L_Venue	SPRINGFIELD
R_Venue	SPRINGFIELD
SHAPE.len	413.893024

Identified 1 feature

Display Source Selection

Drawing

Parcel Layer

Building Footprints

Street Network

Traffic Counts

ADAMS

2250

SHERIFFS

2450

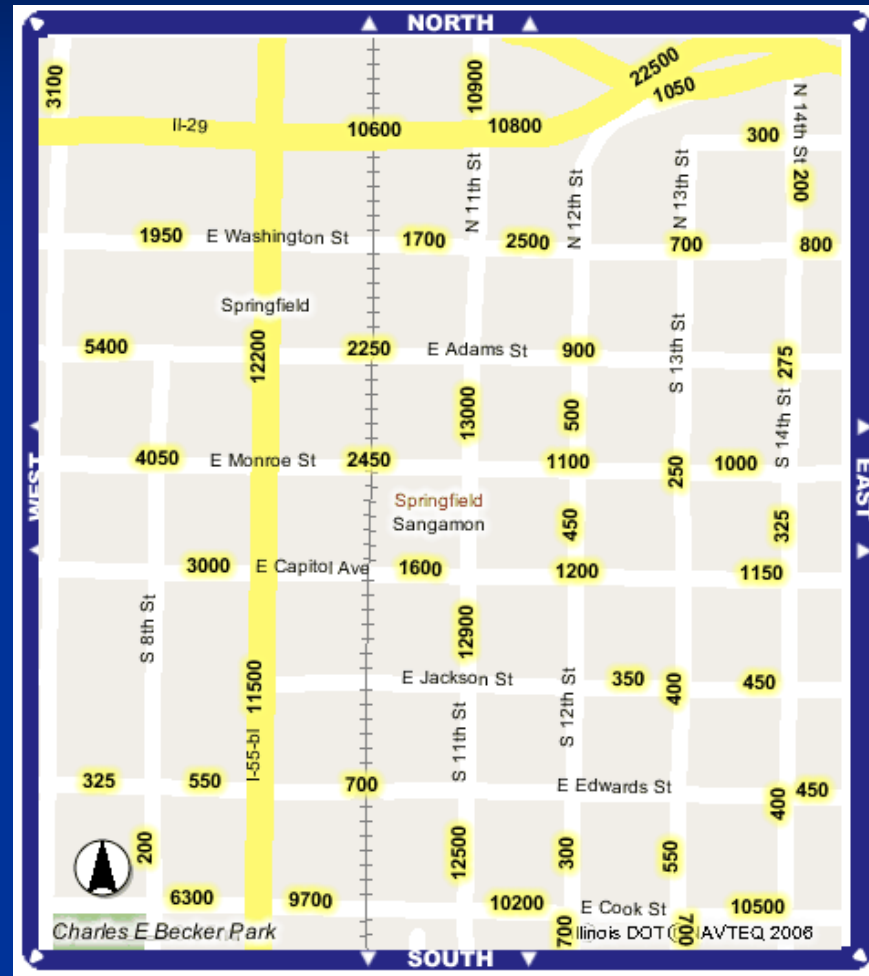
MONROE

COPLEY

11100 9TH

2443183.57 1141841.95 Feet

Data Sources



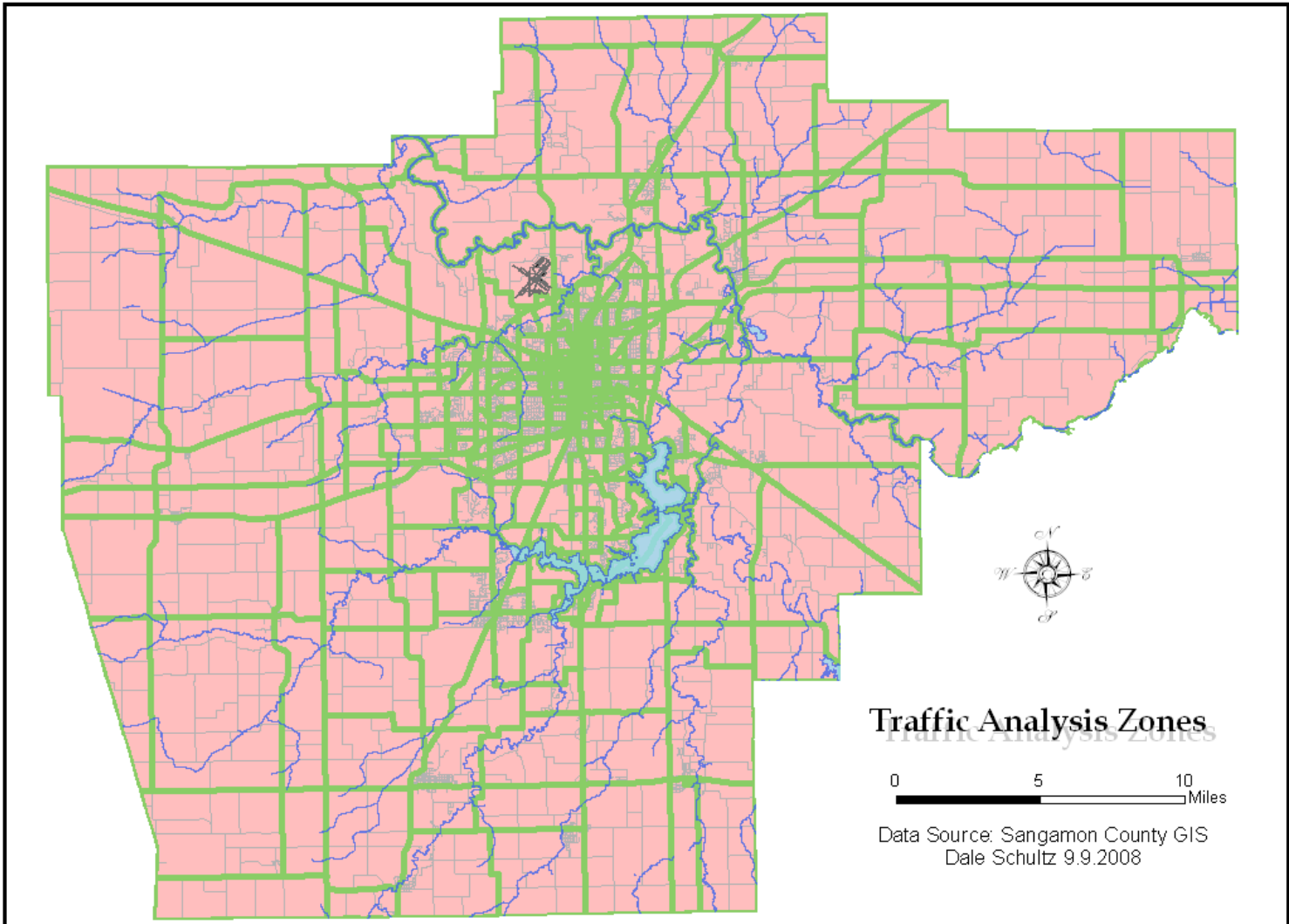
www.gettingaroundillinois.com

Data Collected

- Land Use
- Field Verification
- Aerial Photos
- Google Streetview



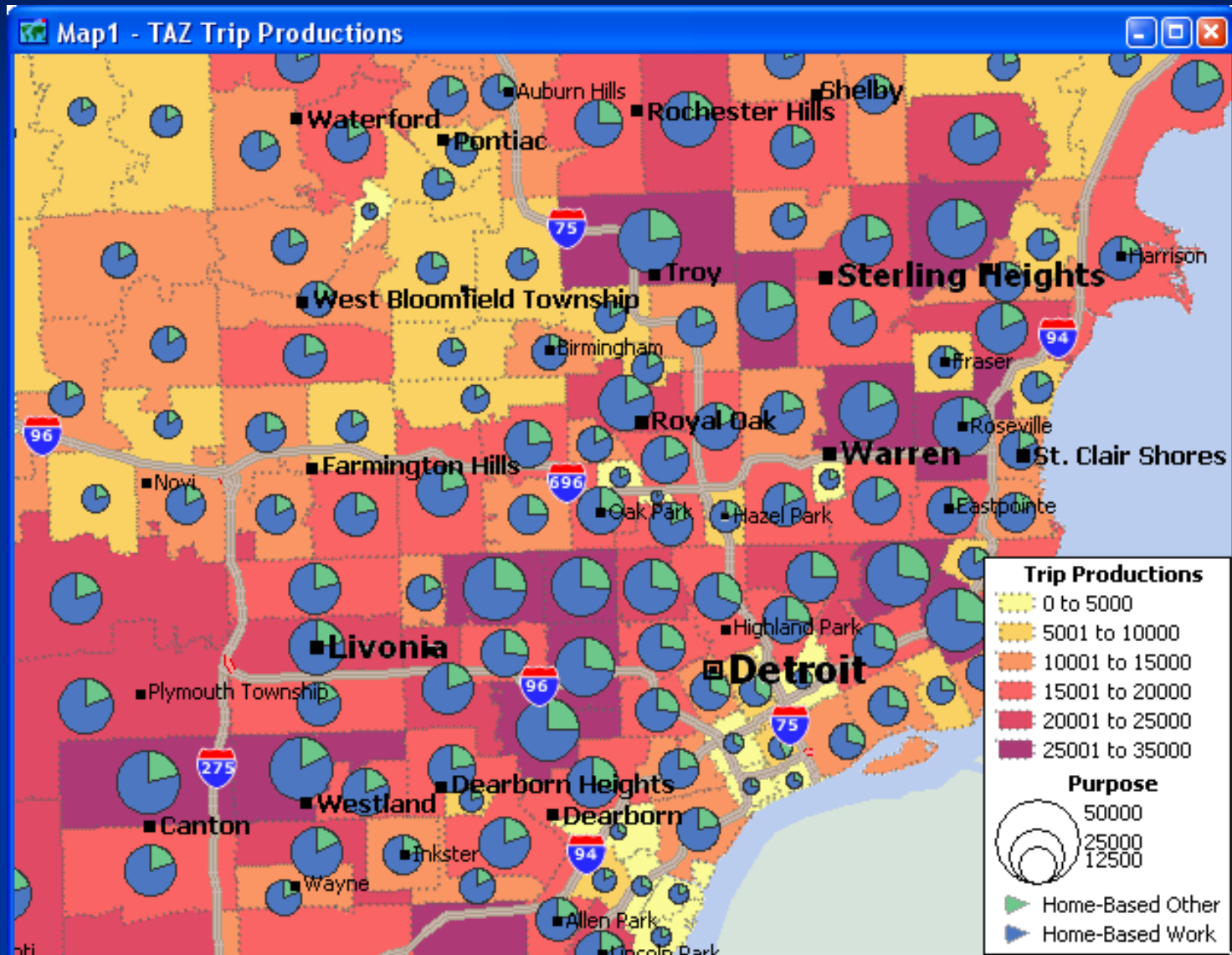
Traffic Analysis Zones



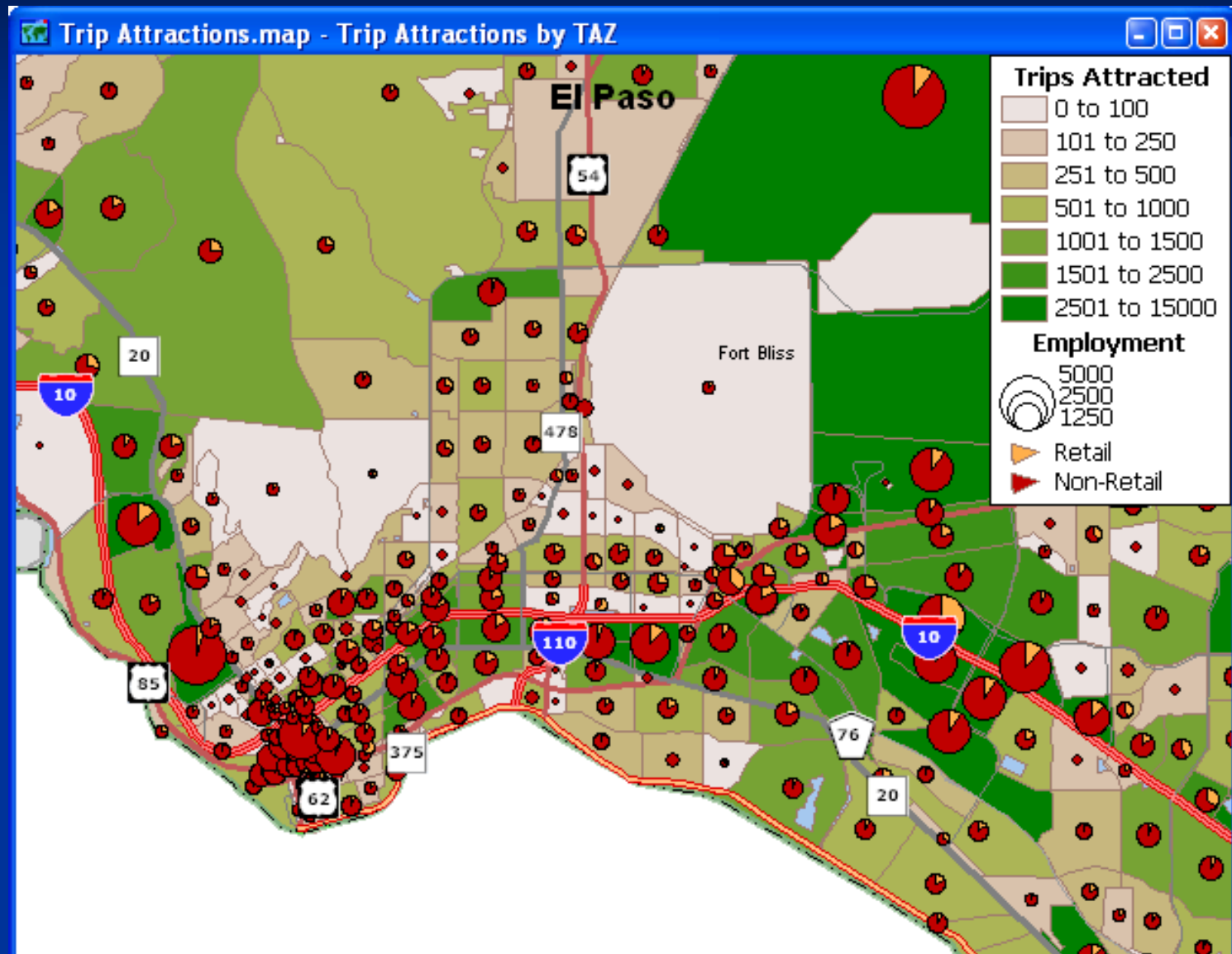
Gravity Model

- The gravity model states that the trips in zone i
- ...will be distributed to each other zone j
- ...according to the relative attractiveness of each zone j
- ...and the relative accessibility of each zone j

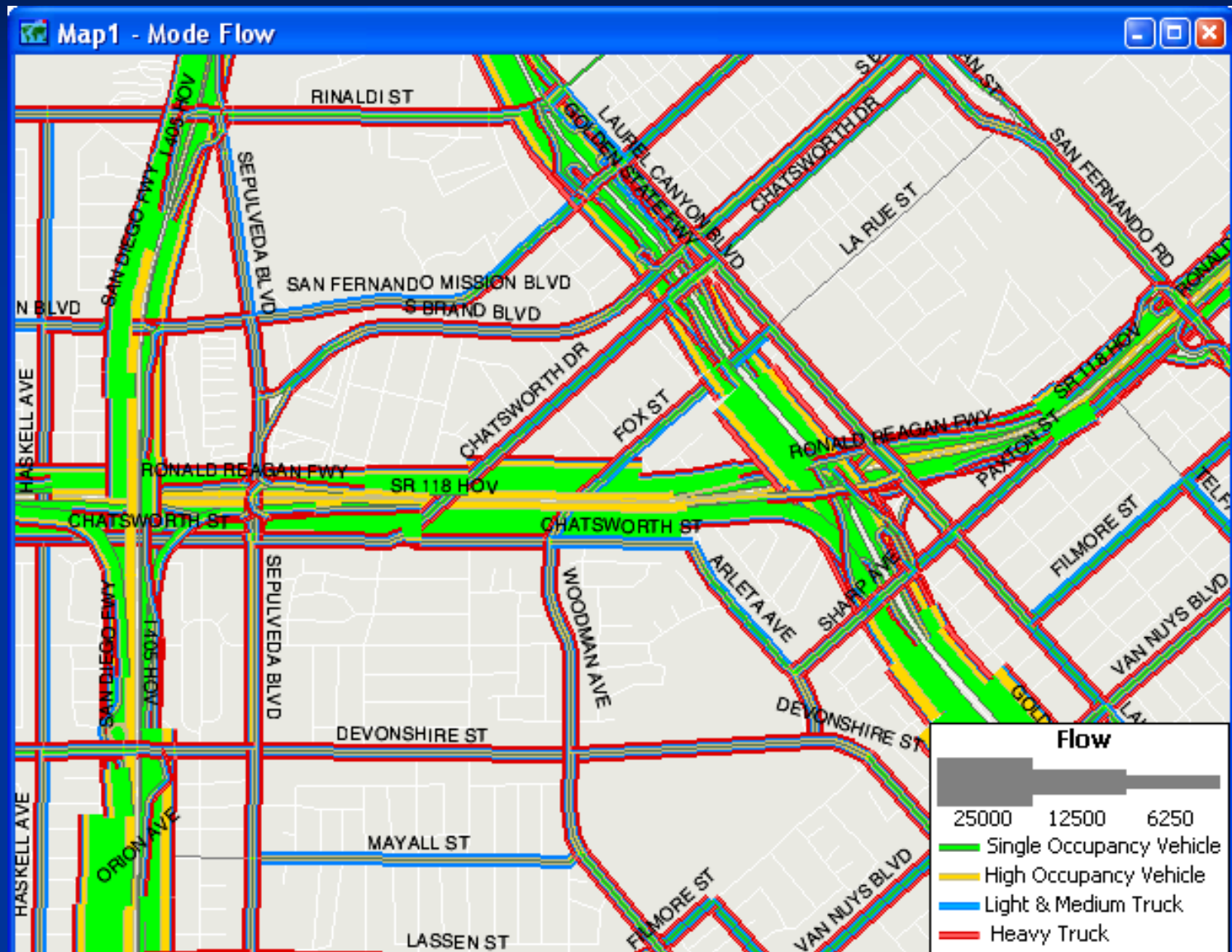
Model Tools



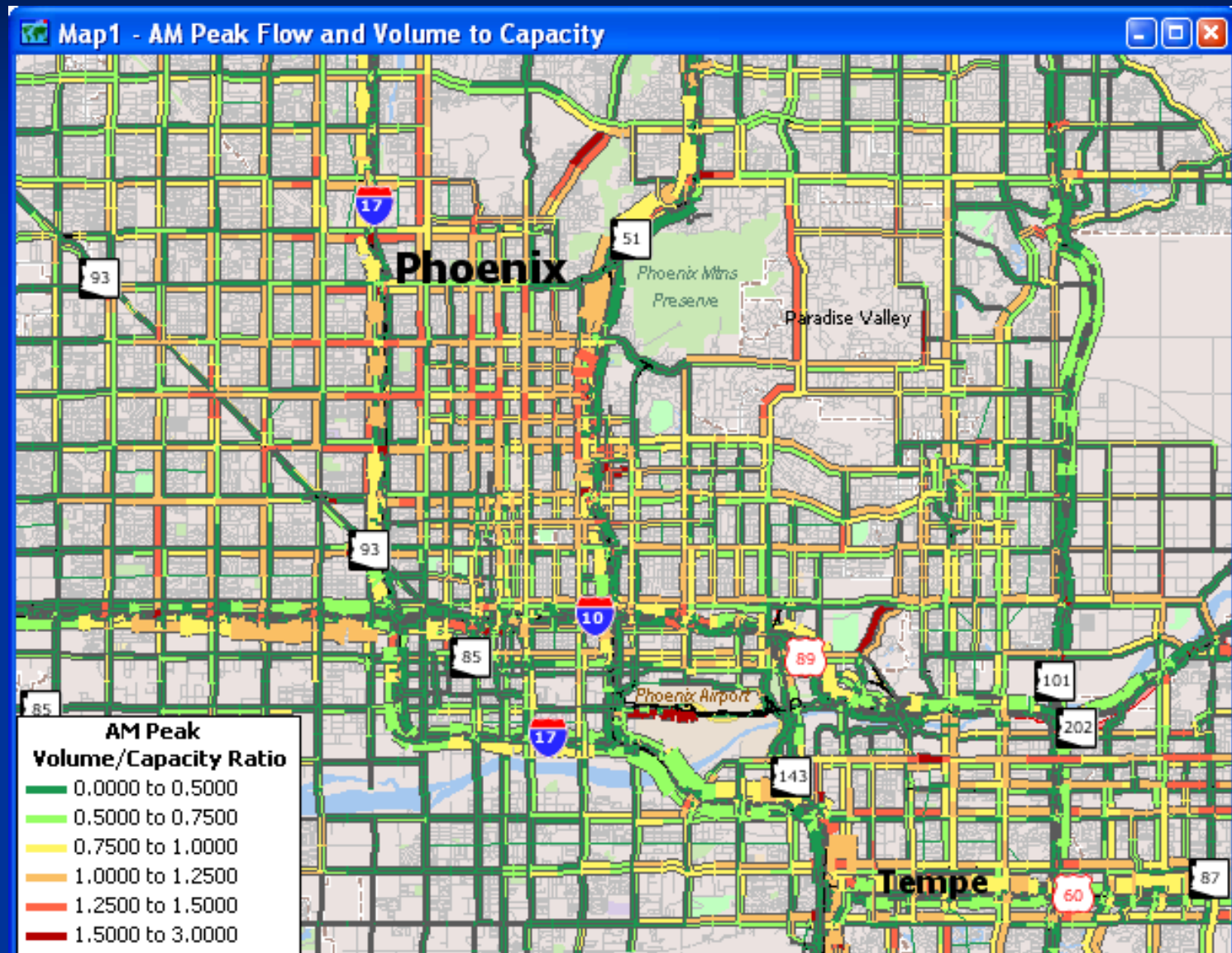
Model Tools



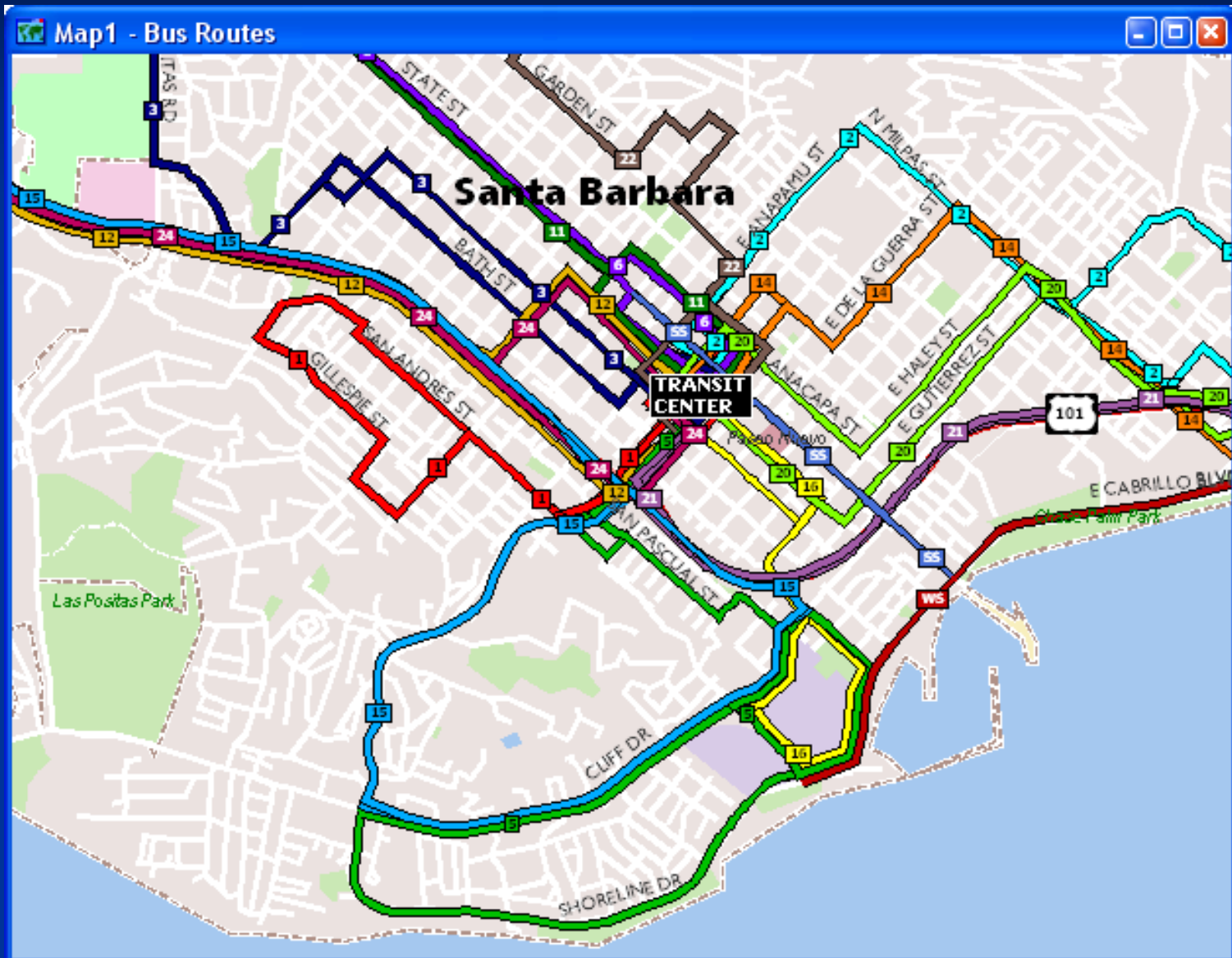
Model Tools



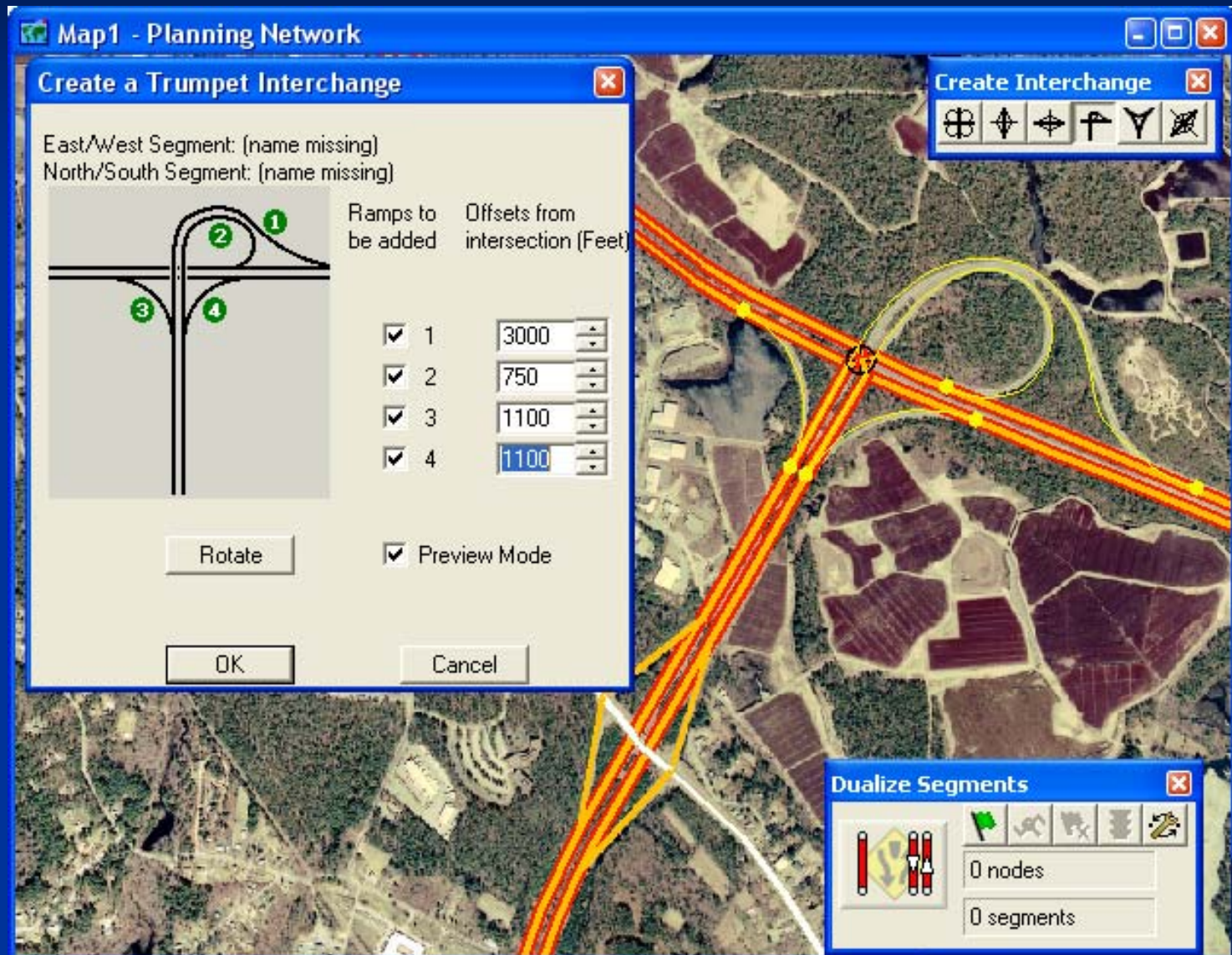
Model Tools



Model Tools



Model Tools



Implications

- Refined estimates
- Prioritization
- Aid policy decisions
- Inclusion in plans
 - Long Range Transportation Plan
 - Transportation Improvement Program
 - Comprehensive Plan
 - Transit Operational Analysis

Maintaining the Model

- Monitor
 - Land Use
 - Street Network
 - Developments
 - Trends in Transportation
- Traffic Counts
- Census Data

Future Possibilities

■ Microsimulation

